THOMPSON

**THOMPSON, SILVANUS PHILLIPS** (*b.* York, England, 19 June 1851; *d.* London, England, 12 June 1916), *applied physics, electrical engineering, history of science and technology.*

Thompson was the second of eight children of Silvanus Thompson, a Quaker schoolteacher, and Bridget Tatham, a member of another distinguished Quaker family. Richard and William Phillips, friends of Faraday, were his great-uncles. After sitting for the external B.A. at the University of London in 1869, Thompson taught at Bootham School in York, where his father was senior master. He continued his scientific studies and earned the B.Sc. (1875) and D.Sc. (1878).

While still a graduate student, he came close to making a discovery of the first order. Edison had noted that trains of sparks associated with electrical apparatus gave rise to effects that could be perceived some distance away, without intervening wires, and had concluded that these effects were a "new force." In a carefully designed experiment, Thompson showed that the mysterious effects were in fact electric; but by not pursuing the matter, he narrowly missed demonstrating experimentally Maxwell's theory of electromagnetic propagation, which Hertz accomplished in 1887–1888.

In 1876 Thompson was appointed lecturer in physics at the newly established University College, Bristol, and in 1878 he became the first professor of physics there. He quickly established himself as a popular and prolific lecturer and author of textbooks on electricity that made his name famous throughout the industrialized world. In 1885 he was appointed principal of Finsbury Technical College in London, one of two polytechnics sponsored by the City and Guilds of London Institute (the other, Central Technical College, later became part of Imperial College of Science and Technology of the University of London). He held this post until his death thirty-one years later.

In London, Thompson participated vigorously in scientific life and became the intimate of Lodge, FitzGerald, Crookes, and other luminaries. The thousands of graduates of Finsbury College, who came along at a time when England had virtually no engineering colleges of university level, repre-

sent perhaps his most important contribution. He also took a hand in the development of radiotelegraphy and wrote a privately printed pamphlet in support of Lodge's claims of priority over Marconi in the invention of a crucial feature, resonant tuning. Another popular work (until his death published anonymously), *Calculus Made Easy* (1910), is still in print three generations later.

In addition to his many technical contributions (notably in X rays, luminescence, magnetism, electrical machinery and illumination, and optics), Thompson was a notable historian of science and technology. His biographies of Gilbert, Faraday, and Kelvin are considered excellent of their sort, and he also published a highly polemic account of the life and work of Philipp Reis, a German schoolmaster whom Thompson persisted in regarding as the inventor of the telephone.

Thompson received many British and international honors but missed being named principal of the University of London when it was reorganized in 1901, possibly because of his stand on the Boer War: as an active Quaker, he openly castigated the British government for its inhuman treatment of civilians in the concentration camps of South Africa. In 1881 he married a fellow Quaker, Jane Smeal Henderson. They had four daughters, the second of whom collaborated with her mother in a biography of Thompson.

*BIBLIOGRAPHY*

I. Original Works. Thompson was a prolific writer. The list of his books, pamphlets, translations, and privately published works is in the *British Museum General Catalogue of Printed Books* (1964). His most influential textbooks are *Elementary Lessons in Electricity and Magnetism* (London, 1881), *Dynamo-Electric Machinery* (London, 1884), *The Electromagnet and Electromagnetic Mechanism* (London, 1887), *Polyphase Electric Currents and Alternate-Current Motors* (London, 1895), *Light Visible and Invisible* (London, 1896), *Design of Dynamos* (London, 1903), and *The Manufacture of Light* (London, 1906). The ever-popular *Calculus Made Easy* was published first in 1910. He also wrote biographies of Philipp Reis (1883), Faraday (1898), and Kelvin (1910); and in 1901 he translated William Gilbert's *De magnete*. Lodge's priority over Marconi in the use of tuned circuits in radiotelegraphy was lucidly and succinctly argued in Thompson's 38-page pamphlet, *Notes on Sir Oliver Lodge's Patent for Wireless Telegraphy* (1911), which is of considerable historic interest.

II. Secondary Literature. The biography by his wife and the second of his four daughters, J. S. and H. G. Thompson, *Sylvanus Phillips Thompson. His Life and Letters* (London, 1920), contains a complete list of his publications. Short biographies appear in *Dictionary of National Biography* (1912–1921), 528–529; and in *Proceedings of the Royal Society*, **94A** (1917–1918), xvi–xviii, with a portrait.

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